Sandia National Laboratories

Environmental Restoration Project

Mission
Members of Sandia's Environmental Restoration (ER) Project assess and conduct cleanup of Sandia sites containing a variety of hazardous and radioactive contaminants resulting from past nuclear weapons development.

Products/Service
Since the project's inception in 1990, ER staff have identified approximately 240 potentially hazardous sites both in New Mexico and elsewhere. To date we have cleaned up and/or proposed 200 sites for no further action (NFA). Sites proposed for NFA were identified as having no significant risk to human health or the environment through administrative record searches, site assessment, and risk analysis procedures.

ER Project staff routinely team with private industry for help in completing assessment and remedial actions. For example, a robotics technology developed by a private company was used in remediation of a radioactive waste landfill in Sandia's Technical Area II. The remote telerobotic system used cameras and a computer-controlled robot arm that allowed cleanup personnel to visually inspect material, perform remote chemical and radiologic surveys, retrieve material selectively without ever coming in direct contact with the hazardous constituents or environments. In a team effort with several universities, ER staff at the Chemical Waste Landfill at Sandia coordinated with staff at the University of Texas at Austin for a partitioning interwell tracer test, and with the University of New Mexico for a biotreatability study at the site.

The ER Project established a chemistry laboratory for performing rapid, quality analyses in support of the Project. Routine analyses include volatile organic compounds, metals, high explosives, nitrate, and anions; ancillary analytical capabilities include semivolatile organic compounds and PCBs.

Field Test of RETRVIR at Waste Bottle Pit

Sandia is a multiprogram laboratory operated by Sandia corporation, a Lockheed Martin Company, for the United States Department of Energy under contract DE-AC04-94AL85000.

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Accomplishments

The Sandia ER team has remediated three landfills, including a gas cylinder disposal pit in Sandia's Technical Area III, a radioactive waste landfill, and a classified waste landfill (both in Technical Area II). The team developed special safety and quality assurance procedures for these project which can now be used at other sites requiring similar excavation techniques.

Locating Bits of Depleted Uranium

Cleanup of low-level radioactive contamination scattered over a number of sites has been completed at Sandia. The ER teams, working with private industry, catalogued and mapped about 4000 hot spots. They removed the radioactive materials and screened the remaining soil for residual activity in order to segregate contaminated from uncontaminated material. This approach greatly reduced disposal costs—a significant factor in any cleanup project.

Sandia, with the help of Kirtland Air Force Base Explosive Ordnance Disposal group and unexploded ordnance (UXO) specialists from private industry, remediated a site that contained World War II vintage ordnance material in approximately 4000 cubic yards of soil piled in mounds. Other completed remediations include removal of soils contaminated with jet fuel, removal of more than 25,000 cubic yards of construction debris from three sites, clean-up of depleted uranium sites, removal of PCB-contaminated soils, and clean-up of metal fragments from a firing site.

Sandia has developed expertise in conducting site hydrological investigations and vapor-phase remediation projects, as well as human health and ecological risk assessments. Superb teaming relationships have been developed between the ER Project and the New Mexico Environment Department, the Department of Energy, the Environmental Protection Agency, and the local citizens' Advisory Board.

Customers

Our principal customer is the Department of Energy, Kirtland Area Office, Sandia's co-permittee for site restoration under RCRA and other environmental regulations. We are also available for consulting with other agencies with sites that have hazardous or radioactive contamination resulting from weapons testing, waste disposal, or other operations.

Team Members

Fran Nimick is the project manager of the Environmental Restoration Project. More than 90 highly qualified technical staff, both Sandians and contractors, and three Sandia line managers carry out the ER work.

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